



# Monarch Monitoring: Citizen Scientists

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Teaching content area: 2<sup>nd</sup> grade, STEM Lesson  
School: Grant Ragan Elementary  
Extern host site: Neal Smith National Wildlife Refuge

## Part I: Overview of Business

- Neal Smith National Wildlife Refuge, U.S. Fish & Wildlife Service.
- Working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.

## Part II: Job Specifics

- Biotech Intern: biology interns monitor and perform prairie and savanna restoration, including monitoring plants and wildlife, propagating plants in the greenhouse, planting seedling prairie plants, hand-harvesting seeds of native prairie plants, data entry and management.

## Part III: Introduce the Problem

The monarch butterfly population is in decline.

## Part IV: Background

- Life cycle of the monarch butterfly.
- Habitat of the monarch butterfly.
- Why monarch butterflies are important: pollination.
- Host plant identification: milkweed plants.

## Part V: Business Solution

- Pollard Walk: Collecting data in transects within varied subplots in the prairie in order to generate species abundance and track population trends.
- Recording any nectaring prairie plants and milkweed plants.

## Part VI: Student Solutions

- Habitat loss.
- Importance of native habitats.
- Relationship between host plant/monarch.